Incidental news exposure on Facebook as a social experience: the influence of recommender and media cues on news selection

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Abstract: Incidental exposure to shared news on Facebook is a vital but understudied aspect of how citizens get involved with politics. This experiment investigates the influence of recommender characteristics (tie strength, political knowledge, political similarity) and different media sources (tabloids, legacy, and digital-born outlets) including multiple mediators(e.g., social pressure, outlet credibility) on incidental exposure to political news on Facebook. A 3 × 3 multi-stimulus, between-subject Experiment with two additional quasi-factors and 135 different stimuli was conducted using a representative sample (N = 507). Results showed that strong ties and recommenders with high knowledge increase news exposure, but the impact of knowledge is limited to recommenders with similar political opinions. Similar effects occur for different media types, which also have an independent impact on news exposure. Structural equation modeling reveals that media source effects are mediated through media perceptions, whereas recommender effects work via the desire for social monitoring and perceived issue importance.

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Abstract

Incidental exposure to shared news on Facebook is a vital but understudied aspect of how citizens get involved with politics. This experiment investigates the influence of recommender characteristics (tie strength, political knowledge, political similarity) and different media sources (tabloids, legacy and digital-born outlets) including multiple mediators (e.g., social pressure, outlet credibility) on incidental exposure to political news on Facebook. A 3x3 multi-stimulus between-subject experiment with two additional quasi-factors and 135 different stimuli was conducted using a representative sample ($N = 507$). Results showed that strong ties and recommenders with high knowledge increase news exposure, but the impact of knowledge is limited to recommenders with similar political opinions. Similar effects occur for different media types, which also have an independent impact on news exposure. Structural equation modeling reveals that media source effects are mediated through media perceptions, whereas recommender effects work via the desire for social monitoring and perceived issue importance.

Keywords: incidental news exposure, news sharing, social ties, Facebook, experiment

Incidental news exposure on Facebook as a social experience: The influence of recommender and media cues on news selection

In today's high-choice media environment, it has become easier for citizens to only select news that is in line with their political leanings (Stroud, 2010) or to avoid political news altogether (Prior, 2007). In such a setting, incidental news exposure (INE) may become increasingly important to ensure that citizens encounter counter-attitudinal information or at least remain connected to the political public sphere. Social network sites (SNS) have been accused of further limiting the chances of INE through algorithmic curation (Thorson & Wells, 2015), but have also been hailed as a promising new source of INE (Lee & Kim, 2017): Even Facebook users who have not intentionally subscribed to a news outlet or whose previous Facebook behavior has not marked them as a suitable target for sponsored posts by news organizations may encounter news articles in their newsfeed via social curation (Thorson & Wells, 2015), i.e., because someone in their personal network has shared an article. Though these personal news recommendations on Facebook are particularly important for citizens who do not follow news and politics on their own, we still know very little about the factors which turn incidental *contact* with news on Facebook into incidental news *exposure*.

Based on a multiple stimuli experimental study ($N = 507$), the article addresses this research gap by investigating which personal news recommendations the recipients are more likely to follow. Drawing on the concept of informational utility (Knobloch-Westerwick & Kleinman, 2012), we assume that incidental news contact is more likely to become incidental news *exposure* if recipients attribute a higher degree of utility to the recommended content. As Facebook provides a social environment for news use, the recipient of personal news recommendation is likely to draw cues for informational utility from the recommender.

Following the lead of Turcotte, York, Irving, Scholl, and Pingree (2015) who investigated the impact of personal news recommendations by Facebook friends perceived as opinion leaders on *intentional* news exposure, we assume that recipients use informational utility cues based on how politically knowledgeable or politically similar the recommender is (politico-social cues). However, we also look in more detail at informational cues based on the closeness of the relationship to the recommender (social cue) by contrasting close and weak ties. In addition, we investigate whether the media outlet as the source of the recommended article also provides relevant cues for its potential informational utility (media cues). And finally we uncover the underlying mechanisms that encourage people to read shared news articles on Facebook (e.g., social pressure, social monitoring, issue importance, or outlet curiosity).

Literature Review

Given the importance of an informed citizenry for democracy, the decline in the overall reach of the news media and its detrimental effects on political knowledge and participation (Prior, 2007) have become a growing cause for concern. The now dominant online media have been both feared for reducing *intentional* news exposure by allowing users to focus more easily on their own, often apolitical, interests (Scheufele & Nisbet, 2002) and praised for increasing the chances of *incidental* news exposure due to the sheer vastness of political information available online (Tewksbury, Weaver, & Maddex, 2001). A number of studies have focused on the impact of INE via SNS on political knowledge and political participation: Kim, Chen, and Gil de Zúñiga (2013) pointed out that INE was more beneficial for those who are already interested in politics, further widening knowledge and participation gaps. By contrast, Valeriani and Vaccari (2015) reported that INE helps reduce participation gaps. These contradictory results indicate, first, a lack of differentiation between incidental news contact (INC) and INE, and second, a need to

better understand how (social media) users select news following INC, i.e., which factors then encourage INE through which underlying mechanisms, particularly on SNS (Karnowski, Kümpel, Leonhard, & Leiner, 2017).

Recommender Cues as a Heuristic for News Exposure on Facebook

Beyond sponsored posts by news companies, INC and INE on Facebook are mostly social experiences: They can occur when someone from a user's social network recommends an article by sharing it. A promising way to determine whether such an article is then selected is the *informational utility* approach. Atkin (1973) proposed that information is perceived as more useful – and thus more likely to be read – the better it meets the individual's needs for surveillance, performance, guidance and reinforcement information that support his or her cognitive, affective, behavioral or defense adaptation to uncertainty. However, news products' informational utility can only be assessed after consumption. Hence, *heuristics* triggered by informational cues play a decisive role in deciding whether to select a specific news item or not (Marewski, Galesic, & Gigerenzer, 2009). While the informational utility concept has successfully been applied to explain, for example, selective exposure to online sources (Knobloch-Westerwick, Carpentier, Blumhoff, & Nickel, 2005), this articles explores whether the additional information on recommenders embedded in shared news on Facebook also provides users with cues relating to the informational utility of the recommended articles, and how these relate to an individual's information needs as proposed by Atkin (1973).

The impact of these informational cues related to the recommender should be comparatively strong as news exposure on Facebook is a far more social experience than in traditional media: Whereas concrete newspaper articles or newscast items might become the topic of interpersonal conversations from time to time, on Facebook a direct response or

interaction following a news recommendation is far more likely. In addition, others can monitor whether the user has followed their recommendation whenever he/she reacts to the article (e.g., by commenting on it).

Still, Facebook friendship networks consist of a wide range of different types of relationships – close friends, co-workers, distant relations, etc. – in other words both strong ties and weak ties (Granovetter, 1973). For the question of INE via news recommendations, weak ties on Facebook are important because they potentially offer more (politically) diverse and new information compared to strong ties (Bakshy, Rosenn, Marlow, & Adamic, 2012). However, recent large-scale data analysis suggests that strong ties exert more influence than weak ties over the behavior of others in an individual's personal network (Bond et al., 2012). This would suggest that Facebook users are also more likely to read articles recommended by close friends.

There are two psychological mechanisms which may explain this influence of tie strength on news recommendations. According to Nadkarni and Hofmann (2012), Facebook use is driven by two main motives: the need to belong and the fear of ostracism. Social networks are used for "social grooming" (Tufekci, 2008), i.e., for fostering relationships to satisfy one's need to belong. On the one hand, Facebook can thus be a positive tool for *social monitoring*, its use even increasing the "inquisitiveness" about one's social network (Karakayali & Kilic, 2013): Facebook users want to learn more about their own social network, their actions, interests and opinions, as this information is useful for maintaining or even intensifying the relationships. Just as the posted profile information, status updates and holiday pictures, news recommendations by friends can actively be used for this form of digital social monitoring. By reading the recommended article, the user can expect to learn more about the political opinions and interests of their friends which may be useful for future interactions by reducing communicatory

uncertainty and thus fulfill the need for performance information (Atkin 1973). News recommendations by strong ties should thus have a greater informational utility as they allow users to increase their knowledge of the people they often interact with or value highly.

However, there is also a downside to this usefulness of Facebook for social monitoring: It occurs in both directions. Facebook users know that their own actions are also monitored by their social network (Marder, Joinson, & Shankar, 2012). Looking at Facebook chats, Mai, Freudenthaler, Schneider and Vorderer (2015) found that fear of isolation and ostracism increased the perceived *social pressure* to respond to messages. Similarly, users may feel social pressure to comply with news recommendations. Even though there is no direct social control – the recommending friend can only see whether friends have followed their recommendation if they react to it – being on Facebook creates a feeling of co-presence. This feeling of being observed (Marder et al., 2012) on Facebook may motivate users to follow the recommendations of a close friend and read the article simply to maintain the relationship, not because they are interested in his/her opinions and interests in the specific situation (i.e., social monitoring). Thus, we propose that both, social monitoring and social pressure, mediate the effect of tie strength.

H1: Recommendations by strong ties lead to higher news exposure than recommendations by weak ties and articles without recommendation.

H2: The effect of tie strength on news exposure is mediated via (a) an increased motivation for social monitoring and (b) greater perceived social pressure.

The informational cues provided by the news recommendation of a friend, however, are not limited to these social cues related to how useful the article might be to manage personal relationships. The recommender may also trigger social cues related to how useful the recommended article might be for political questions (i.e., politico-social cues). According to the

informational utility approach, people perceive news to be more useful if it provides them with information to satisfy guidance needs, i.e., to learn about and understand developments that may affect them and develop an opinion on them (Atkin, 1973). The usefulness of the information for guidance is perceived as higher if it comes from (or is recommended by) someone with expertise in the relevant field (Metzger & Flanagin, 2013). Especially on Facebook, where users feel (more) overloaded with news and information than, for example, while watching television (Hargittai, Neuman, & Curry, 2012), politico-social cues gain importance. Turcotte et al. (2015) demonstrated that opinion leaders' news recommendations on SNS increased the trust in the recommended news outlet and led to more intentional news exposure (news seeking) in the recommended news outlet than recommendations by persons not perceived as opinion leaders. An article shared by a friend who is perceived to be knowledgeable about the subject should thus have greater informational utility for the recipient because it signals that the article is perceived as relevant and recommendable by someone who has a comparatively high level of knowledge on the topic allowing the recipient to apply the expert heuristic.

H3: Recommendations by Facebook friends perceived to be highly knowledgeable about the topic of the news article lead to higher news exposure than those by less knowledgeable friends and articles without a recommendation.

According to partisan selective exposure theory, people employ a confirmation bias when selecting news and are more willing to expose themselves to attitude-consistent than to attitude-discrepant information as this fulfills their need for reinforcement (Knobloch-Westerwick, Johnson, & Westerwick, 2015; Metzger & Flanagin, 2013). Hence, knowing whether the friend shares the same political leanings could serve as a further heuristic to help decide whether the article contains useful information and should be read. The results of large-scale data analyses

support this proposed mechanism on SNS – at least for political issues. Bakshy, Messing, and Adamic (2015) analyzed the subsequent usage of 7 million shared news articles on Facebook and found that only 20 to 30% of all clicked-on news articles were from politically dissimilar ties; the majority of articles that were ultimately read were recommended by like-minded ties.

H4: Recommendations by Facebook friends perceived as having a similar opinion on the topic of the news article lead to higher news exposure than those by friends with a dissimilar opinion and articles without a recommendation.

Within the rationale of confirmation bias, it seems likely that the expected effect of the perceived knowledge of the recommender (see, H3) is not independent of the perceived opinion similarity. Users might expect news recommendations by friends with high topical knowledge to be *even more* useful when the recommended information is likely to be not only of superior quality but also to confirm existing beliefs. In contrast, news recommended by friends with high knowledge but a dissimilar opinion might still be perceived as useful for guidance needs and for specific goals such as preparing for a debate on the topic (Hart et al., 2009). At the same time, however, those recommendations could pose a serious threat to opinion reinforcement as they can be expected to contain strong counter-arguments to one's own opinion and should thus be selected less (Hart et al., 2009). We investigate this possible interaction by asking whether the effect of the perceived knowledge of the recommender persists regardless of the expected utility to reinforce existing opinions.

RQ1: Does a friend's perceived political knowledge interact with perceived opinion similarity in predicting news exposure?

To better understand why political knowledge and similarity of the recommending friend might affect the recipient's news exposure, we will also take a look at the role of perceived issue

importance as both as an independent outcome of news recommendations and as a mediator for news exposure. Traditionally, perceived issue importance was seen – on an aggregate level – as being driven by the media agenda in agenda setting processes. When taking a more fine grained look, however, it emerges that the perception of the relevance of a specific issue is not universal, it differs between social groups, or more precisely, issue publics, which are each more likely to select articles on "their" issues (Bolsen & Leeper, 2013). Furthermore, people are aware of these differences in issue importance between different groups and will adapt their assessments of issue importance accordingly: They are aware that some issues are more important to themselves personally than to their social group or to society at large and vice versa (Glynn, Ostman, & McDonald, 1995).

Moreover, recent research has pointed out that it does not require exposure to complete news items for changes in perceptions of issue relevance to occur. According to Stoycheff, Pingree, Pfeifer, and Sui (2018), agenda setting can also occur as agenda *cueing* when cues such as the number of posts about a topic are used to evaluate the relative importance of this topic. Still, given the social nature of INE on social networks, citizens' perception of issue importance should be affected by the way in which it is brought to their attention, i.e., who "shared" and thus recommended the article. By sharing an article, the recommending friend clearly indicates that he or she believes this an important issue. If this friend is knowledgeable on the topic or has similar opinions on it, recipients should be more likely to trust his or her issue assessment and thus adjust their own perception of issue relevance which in turn should increase news exposure.

Though these news recommendations should affect all perceptions of issue importance, we assume that their impact should be felt more when assessing issue importance for oneself and

for one's social group as people are focused on their own self-representation and the contact with their immediate social group on Facebook (Alhabash & Ma, 2017).

H5: Recommendations by friends that are perceived as having high knowledge or a similar opinion on the topic, and the interaction of both increase perceived issue importance for (a) society, (b) one's own social environment and (c) oneself.

Perceived issue importance or topic relevance has also long since been identified as a main driver of news selection (Rubin, 1994) and might thus mediate the recommender effects on news exposure: As the recommenders' high topical knowledge or opinion similarity increase the perceived issue importance, this could encourage news exposure. It remains to be seen, however, whether it is the perceived *general* relevance or the perceived *personal* relevance of an issue that guides news selection (Bolsen & Leeper, 2013). Thus, we ask more broadly which kind of issue importance mediates the effects of the politico-social characteristics of the recommender.

RQ2: Does the perceived importance of an issue for a) society, or b) one's own social environment or c) oneself mediate the effects of the friend's perceived political knowledge, of the friend's perceived opinion similarity, and of their interaction on news exposure?

Media Cues as a Heuristic for News Exposure

Recipients have developed news preferences outside of Facebook, e.g., based on their political views (Iyengar & Hahn, 2009), their preference for entertainment rather than news (Aalberg, Blekesaune, & Elvestad, 2013) or for negative content and tabloid packaging (Kleemans, Hendriks Vettehen, Beentjes, & Eisinga, 2011). Since media outlets share the links to their news articles on Facebook, the users' news preferences should guide their news selection on the social network site, too. Therefore, we expect that recipients' news exposure differs for media source cues from legacy, tabloid and digital-born media according to their preferences.

Three possible underlying psychological mechanisms can explain how media source cues structure Facebook users' news exposure: They signal the *credibility* and *societal relevance* of political information, but also spark *curiosity* about an unknown outlet. First, if a reader perceives an outlet to be very credible, they are more likely to read articles from this source (Choi, Watt, & Lynch, 2006). Legacy news media (e.g., newspapers of record, such as the *New York Times*) are perceived to be highly credible sources of political information. By contrast, citizens consider the tabloid media (e.g., *The Sun*) to have significantly lower credibility (Urban & Schweiger, 2014). Experimental data confirm that users rely on media source cues to estimate the credibility of the information offered. The higher perceived credibility of legacy media increases the likelihood that SNS users will select articles from quality media rather than tabloids (Winter & Krämer, 2014).

Second, users may choose to read a news story because of the *societal relevance* of the news outlet. In most countries, one or more news outlets are perceived as central sources whose news coverage is followed by a large share of the population, by political elites, or by other news media (Nielsen, 2012). Although articles from digital-born news providers look very similar to the products of mainstream media when shared on Facebook, the recipients lack previous experience with them, so their brand logo cannot serve as a media source cue on the potential credibility or societal relevance of the outlet.

Third, a shared article from an unknown source might spark *curiosity*. Stumbling over an unknown outlet raises arousal and thus curiosity as a coping mechanism. As they are easily able to find out more about the outlet – it is literally only one click away – their interest in reading the article increases (Silvia, 2008). Articles from an unknown source might thus be read out of curiosity about the newly discovered outlet.

Since legacy media are perceived to more credible and relevant, we expect legacy media to have a positive mediation effect via perceived credibility and societal relevance on reading intention compared to digital-born outlets and tabloids. We also expect outlet curiosity to positively mediate user's intention to read shared articles from digital-born outlets compared to legacy outlets and tabloids.

H6: News exposure to recommended articles differs by the type of media outlet.

H7: The effect of media type on news exposure is mediated through (a) perceived credibility of the outlet, (b) perceived societal relevance of the outlet and (c) curiosity about the outlet.

Method

Design and sample

We conducted a randomized 3x3 between-subject multi-stimulus online experiment with two additional quasi-factors in Germany in March 2017. In all conditions, participants saw a mock-up Facebook stream containing a teaser for a political news article. First, we varied the *type* of centrist *media* as the source of the article (legacy newspaper vs. unknown digital-born outlet vs. tabloid newspaper). Second, *tie strength* manipulated whether the article was shared and recommended by a close friend of the participant (a strong tie), by a distant friend (a weak tie), or whether the article appeared without any recommendation in the Facebook stream. The recommender's political knowledge and opinion similarity were both measured as non-manipulated quasi-factors, i.e., as perceived by the participant receiving the recommendation.

Using an online access panel provided by the survey company Respondi, we recruited an interlocked quota sample representative in terms of age and gender of German Facebook users between 18 and 69 (following the official Facebook definition we defined users as those using

their Facebook profile at least once a month). We tried to reach a statistical power (1-β) of .95 which would require 560 finished interviews for medium effect sizes (d = .5) given our complex design. However, necessary data cleansing due to failed awareness checks left us with N = 507 finished interviews (completion rate: 31.05%) which equates to a power of .92 assuming no missing values on covariates or quasi-factors. The average age was M = 38.45 (SD = 12.49). Similar to the German Facebook population, there were slightly more men (n = 268, 52.9%) than women in the sample and about half of the participants reported holding at least a high school degree (n = 281, 55.9%). Participants received vouchers for the completion of the survey.

Procedure and manipulation

After receiving their consent, age, gender, education, residency and frequency of Facebook use were measured. Then, participants answered questions on their interest in different topics. Next, we manipulated the tie strength, depending on the randomly assigned experimental group: we either prompted participants to think of a person to whom they feel close and with whom they have relatively frequent contact via Facebook or of a person from the participant's distant network (weak tie condition): "Please think of a person who is close to you (you only know distantly), with whom you feel personally strongly connected (feel loosely connected) and with whom you have regular (rare) contact via Facebook, e.g., through seeing his or her Facebook posts or through private messages. This could be a friend, a relative or your partner (former school friend, distant acquaintance or a former workmate), for example." To amplify the manipulation, participants wrote down the name of the person and rated how close they feel to the person and how often they had contact with them via Facebook. We presented the name of this person in each question and told respondents that they should keep them in mind before the stimulus was shown next.

The stimuli for all conditions consisted of three parts (see Online Appendix B). The first part told participants to imagine that the following two posts originated from the chosen person, displaying the name again. Participants in the "no recommendation" condition saw the same reminder, but were told that only the first post originated from the imagined person. The second part was an apolitical post by the imagined recommender about vacation pictures. This part was constant in all conditions to increase the realism of the Facebook stream. The third part consisted of a posted news article showing the headline, a picture, and a short teaser. For tie strength, the weak and strong tie condition saw the news article as a shared post with a recommending comment as it typically appears on Facebook. The profile picture and the name of the recommender were pixelated so that participants could imagine the profile picture and the name of the chosen person. For participants in the no recommendation conditions the news article appeared without a recommendation as an original post by the media outlet. For the media source cue, we varied the logo, name, and URL of the media outlet from which the news article was initially posted using their real Facebook pages.

To enhance our external validity, we used three multi-stimulus factors. First, we used two different but comparable media outlets per media type: *Süddeutsche Zeitung* (645,099 fans as of 15 March 2017) and *Frankfurter Allgemeine Zeitung* (458,649 fans) as legacy outlets and *Telepolis* (20,574 fans) and *Krautreporter* (86,879 fans) as unknown digital-born media. The only exception is the tabloid condition, because *Bild Zeitung* (2.280.155 fans) is the only national tabloid. Second, the news article dealt with one of five comparable topics (*regulation of monopolies*, *elections in Serbia*, *transparency of lawsuits*, *water protection*, and *broadband expansion)*, all of which were political topics, hard news, moderately relevant, and without issue ownership of a specific party. Third, we used two comparable sentences for the recommendation

of the news article by the Facebook friend: “Finally a report that summarizes the whole issue. It’s worth it!” and “Finally an article that puts the topic straight. Readable!” Due to these multi-stimulus factors, our experiment used 135 different stimuli for the nine experimental conditions.

We measured our mediators and dependent variable after the participants had seen the stimulus. Next, we asked for quasi-factors and manipulation checks. Lastly, the participants answered some basic questions on their general media use before debriefing.

Measures

Dependent Variable. The *intention to read* the news article was measured through four items using 6-point scales from 1 to 6 (e.g. “I would like to read what the news article contains.”). The items showed high reliability (Cronbach’s $\alpha = .97$) and were summarized to an index ($M = 3.87$, $SD = 1.45$).

Politico-social quasi-factors. Regarding the topic of the news article, we measured *perceived opinion similarity* between the participant and the recommender using a single item on a 7-point scale from 1 to 7 (“Please remember the topic of the news article. Would you say that you and [name] have rather the same or rather an opposite opinion on that issue,” $M = 5.11$, $SD = 1.32$). With a second single item using a 7-point scale, the participant assessed the *perceived knowledge of the recommender* on this topic (“What do you think, how much knowledge has [name] about the topic of the news article?”, $M = 3.80$, $SD = 1.64$).

Politico-social cue mediators. The perceived importance of the topic of the news article was measured on three dimensions using three items on 6-point scales for each dimension: *perceived importance of the topic for the society* (e.g., “The topic is important for the whole society,” $\alpha = .94$, $M = 4.14$, $SD = 1.13$), for the *own social environment* (e.g., “The topic is

relevant in my social environment," α = .97, *M* = 3.27, *SD* = 1.35), and for *oneself* (e.g. "The topic is significant to me", α = .97, *M* = 3.43, *SD* = 1.44).

Social cue mediators. Perceived *social pressure* to read the article was measured with three items (e.g., "I would have read the article because my social environment would expect it of me.") on 6-point scales and summarized to an index (α = .90, *M* = 1.71, *SD* = 1.03). Motivation for *social monitoring* was assessed with three items (e.g., "I would have read the article because I could better assess what opinion [name] has on this topic."), again using 6-point scales and computing an index (α = .97, *M* = 3.22, *SD* = 1.54).

Media cue mediators. The participants were asked to choose the one media outlet they had seen in the stimulus from a list of twelve names. The *perceived credibility of the outlet* was measured with five items adapted from Tsfati (2010), each of which used 6-point scales (e.g., "The media outlet is credible", α = .98, *M* = 3.08, *SD* = 1.53). *Societal relevance of the outlet* was asked with four items, again on 6-point scales (e.g. "Issues concerning the whole society are the focus of the media outlet", α = .93, *M* = 3.81, *SD* = 1.30). In addition, we gauged participants' *outlet curiosity* using one item ("I would have read the article because I did not know the outlet and was curious what kind of outlet it is", *M* = 2.25, *SD* = 1.42). Only participants who correctly remembered the media outlet were asked their perceptions of the outlet to which they were exposed (*n* = 254, 50.1%). However, our analyses still include those participants that could not remember the outlet because we assume that media cues could be effective even without a correct recall of the outlet. Participants with missing values on these mediators will only be excluded pairwise when testing the media cue mediators.

Control variables. We measured *Facebook usage* with two items allowing us to calculate the Facebook use per week in hours (*M* = 6.25, *SD* = 8.77). To measure the *previous topic*

interest, we used a battery of ten items on 7-point scales. Five of them asked for the participants' interest in each of the five topics we used for the news article, and five were on other topics for distraction ($M = 4.27$, $SD = 1.67$). Lastly, we asked whether the participants are *following any news site on Facebook*: 59.8% ($n = 303$) reported that they did not follow any news site. We performed a simultaneous confirmatory factor analysis with all our measures showing that all items loaded on the expected factors (RMSEA = .030, CFI = .987, SRMR = .034).

Manipulation check and tests of internal validity

We asked the *perceived social utility of information of the chosen recommender* at the end of the questionnaire with four items on 6-point scales (e.g. "I like to be up to date regarding [name]", $\alpha = .97$, $M = 3.83$, $SD = 1.68$). An independent t-test confirmed that information from strong contacts ($M = 5.14$, $SD = .84$) had a significantly higher social utility than information from weak contacts ($M = 2.43$, $SD = 1.15$, $t(370) = 26.03$, $p < .001$, $d = 2.69$). We also asked about participants' familiarity with different media outlets revealing that we succeeded in selecting media outlets with differing degrees of familiarity for the manipulation: 90% knew the screened legacy outlet and 95.3% knew the tabloid, but only 10.2% were familiar with the digital-born outlet (χ^2 ($df = 2$, $n = 507$) = 337.60, $p < .001$, Cramer's $V = .82$).

Furthermore, we tested the internal validity of the experiment. First, we confirmed that the manipulation of the tie strength had no unintended spillover effects on users' intention to read or on measured mediators of the control group. Second, we checked whether our multi-stimulus factors worked successfully. There were no differences in the dependent variable or any of the mediators between the two recommendation sentences nor between the summarized media outlets per media type. In addition, the multi-stimulus factor topic showed no main effect on the dependent variable nor on the social, and media cue mediators nor interaction effects with our

independent variables on these outcomes. That is, the results do not vary systematically by the five topics of the news articles. However, regarding our three politico-social mediators, the water protection issue was seen as significantly more important than the other topics. Therefore, we tested for metric invariance between this topic and all other topics displaying satisfying invariance (n = 507, RMSEA = .061, CFI = .957, SRMR = .059) and an alignment procedure showed no differences in the factor loadings. Thus, we summarized the topics as intended for the following data analyses but will control for the higher issue importance of the water protection topic in the mediation analysis.

Results

To test our proposed main and interaction effects (H1, H3, H4, RQ1, H6), we computed a factorial between-subject ANCOVA with the independent variables tie strength, knowledge of the recommender, opinion similarity, media type, and all possible interactions between them; the covariates previous topic interest, Facebook use per week, and the general following of any news site on Facebook; and reading intention as the dependent variable (see, Online Appendix A for descriptive data and Table 1 for model coefficients). The recommender's level of knowledge and opinion similarity were integrated by using median splits ($n_{\text{dissimilar (1-5)}}$ = 151, 53.9%; $n_{\text{similar (6-7)}}$ = 129, 46.1%; $n_{\text{low knowledge (1-3)}}$ = 118, 42.1%; $n_{\text{high knowledge (4-7)}}$ = 162, 57.9%). Due to missing values on covariates and quasi-factors, our sample size decreased to n = 382 for this analysis. That is, the statistical power is reduced to .79 to find effects with a medium size (d = .5) but is still high enough to find strong effects (d = .8) with 1-β = .99. The model explained 27% of the variance (R^2 = .27, R^2_{adjusted} = .21) and was significant (p < .001).

--- TABLE 1 ABOUT HERE ---

For tie strength (H1), we revealed a significant main effect ($F(1, 352) = 4.20$, $p = .016$, $\eta_p^2 = .02$). Simple effects displayed that articles recommended by close friends led to a significantly ($p = .024$) higher reading intention ($M = 4.21$, $SE = .11$) than those recommended by distant contacts ($M = 3.77$, $SE = .13$) or not recommended articles ($M = 3.79$, $SE = .13$, $p = .035$, all simple effects analyses included the three covariates and used the Šidák correction, all reported p-values are two-tailed). There were no differences between articles that were not recommended or recommended by distant contacts ($p = .99$). While we did not find a main effect of opinion similarity (H4, $F(1, 352) = .41$, $p = .53$), we detected a significant main effect for the recommender's level of knowledge (H3, $F(1, 352) = 9.41$, $p = .002$, $\eta_p^2 = .03$). Simple effects showed that recommendations from friends perceived to have high levels of knowledge about the topic led to a significantly ($p = .007$) higher intention to read an article ($M = 4.24$, $SE = .11$) than recommendations from friends perceived to have low levels of knowledge ($M = 3.73$, $SE = .13$) and articles that were not recommended ($M = 3.79$, $SE = .13$, $p = .020$); there was no difference between low levels of knowledge and no recommendation ($p = .987$).

For the media type (H6), we found a significant main effect ($F(2, 352) = 4.20$, $p = .016$, $\eta_p^2 = .02$). Simple effects showed that the intention to read articles from legacy newspapers ($M = 4.22$, $SE = .13$) was significantly ($p = .030$) higher than for tabloids ($M = 3.76$, $SE = .13$), but there were no differences between legacy and digital-born outlets ($M = 3.92$, $SE = .13$, $p = .28$) or between tabloids and digital-born outlets ($p = .76$).

We found a significant interaction between opinion similarity and recommender's level of knowledge (RQ1, $F(2, 352) = 12.30$, $p = .001$, $\eta_p^2 = .03$). Simple effects showed that the aforementioned main effect of knowledge is mainly shaped by the condition of high opinion similarity ($M_{\text{similar high knowledge}} = 4.58$, $SE_{\text{similar high knowledge}} = .15$, $M_{\text{similar low knowledge}} = 3.50$, SE_{similar}

$_{\text{low knowledge}}$ = .20, $p < .001$) whereas knowledge does not have an effect when opinions are dissimilar ($M_{\text{dissimilar high knowledge}}$ = 3.90, $SE_{\text{dissimilar high knowledge}}$ = .15, $M_{\text{dissimilar low knowledge}}$ = 3.97, $SE_{\text{dissimilar low knowledge}}$ = .15, p = .747). To secure our finding, we performed an additional moderation analysis with PROCESS using the metric, mean-centered values for recommender's level of knowledge and opinion similarity, excluding the conditions with no recommendation from the analysis (new n = 289) and controlling for the influence of tie strength. This analysis confirmed the significance of both the recommender's level of knowledge (b = .20, p = .006) and the interaction between knowledge and opinion similarity (b = .08, p = .039). As Figure 1 illustrates, the effect of knowledge depends on at least a moderate opinion similarity. The Johnson-Neyman significance value is -.77 for the mean-centered opinion similarity, equating to a value of 4.39 on the non-centered 7-point scale.

Additionally, there were no interactions between media type and tie strength (F(2, 352) = .14, p = .87), media type and opinion similarity (F(2, 352) = .34, p = .717), or media type and recommender's level of knowledge (F(2, 352) = .71, p = .49). That is, the recommender cues work the same for the three different media types.

--- FIGURE 1 ABOUT HERE ---

To test for the proposed mediation processes (H2, RQ2, H7) and the experimental effect on issue importance (H5) beyond the already described main and interaction effects, we performed a structural equation model in R's lavaan package with the MLR estimator using tie strength, opinion similarity, recommender's level of knowledge, its interaction, and media source as exogenous variables, the social, politico-social and media cue mediators as latent endogenous variables; and reading intention as the final endogenous variable. Again, we excluded the conditions without recommendation, controlled for the same three covariates, and used the

metric mean-centered values for recommender's level of knowledge, opinion similarity and its interaction. We split the categorical independent variable media type into dummies using legacy outlets as the respective baseline. In addition, we controlled for the topic of water protection to account for its greater perceived issue importance (CFI = .977, RMSEA = .034, SRMR = .032).

The results (see Figure 2 for the structural model and Table 2 for statistical tests on indirect effects) show that tie strength influenced the two social mediators. Strong ties increased social pressure (b = .48, p < .001) and social monitoring (b = .90, p < .001), but only social monitoring is associated with reading intention (b = .40, p < .001). The indirect effect of tie strength via social monitoring (H2a) is significant (unstandardized coefficient = .36, p < .001).

--- FIGURE 2 AND TABLE 2 ABOUT HERE ---

The recommender's level of knowledge affected all three politico-social mediators (H5a issue importance society: b = .08, p = .035, H5b issue importance social environment: b = .19, p < .001, H5c issue importance self: b = .14, p = .001). Only issue importance for oneself in turn correlates with reading intention (b = .24, p = .018). However, the indirect effect of knowledge via issue importance for oneself was only marginally significant (unstandardized coefficient = .03, p = .056, RQ2c). Instead, the recommender's knowledge showed an indirect effect on reading intention via social monitoring (unstandardized coefficient = .08, p < .001). Opinion similarity showed no effects, but the interaction between knowledge and similarity increased the perceived issue importance of the social environment (H5b, b = .08, p = .006) and oneself (H5c, b = .13, p < .001). However, only the indirect effect on reading intention via issue importance for oneself was significant (unstandardized coefficient = .03, p = .041, RQ2c).

Media type had no influence on the social or politico-social mediators; it only exerted effects on the media mediators. Tabloid articles led to a significantly lower perception of outlet

credibility (b = -2.29, p < .001) and societal relevance of the outlet (b = -1.23, p < .001) than those from legacy media. Among these mediators, only the indirect effect on reading intention via the societal relevance of the outlet was significant (unstandardized coefficient = -.48, p = .015, H7b). Digital-born media were perceived as less credible (b = -.86, p = .003) and less societally relevant (b = -.65, p = .003) than legacy outlets, but only the indirect effect via societal relevance was at least marginally significant (unstandardized coefficient = -.25, p = .055, H7b).

Discussion

Facebook (and other SNS) have been seen as promising sources of INE to assure an informed citizenry (Lee & Kim, 2017). However, the inherently social character of INE on Facebook may lead to changes in the heuristics used by citizens to decide which of the news articles that they incidentally stumble upon they will actually read.

According to our experiment, there are three paths that encourage news exposure based on INC among Facebook users. First, social cues of the recommender increase reading intention via *social monitoring*: If the recipient feels close to the recommending friend, he or she will read the recommended article to increase their knowledge of the recommender. Although respondents feel stronger social pressure to read articles recommended by close ties, this does not produce greater intentions to read. More importantly, recommendations from weak ties do not motivate recipients to read the recommended article compared to articles that are not recommended. In other words, though weak ties are expected to be more diverse and should thus have a higher potential to recommend counter-attitudinal information, Facebook users are less likely to follow their recommendations, regardless of their political knowledge or the similarity of their opinions, or how respectable the recommended media source is. This phenomenon is further enhanced by the Facebook algorithm that assures that recommendations from weak ties as well as

recommendations that do not match a user's interests are less likely to appear in their news stream. Hence, INE on Facebook can only have a positive impact on exposure to political news, and in particular on exposure to politically *diverse* news, if users have close ties to people who are interested in politics and have different political outlooks.

The second path reflects the importance of opinion leaders for INE in a social setting such as Facebook (see also Turcotte et al., 2015): Following recommendations by friends with high levels of topical knowledge and similar political opinions, participants believed the issue of the recommended article was more relevant to them personally and were hence more likely to read it. This, again, may facilitate exposure to like-minded news articles, but not cross-cutting exposure. Interestingly, political similarity alone does not predict reading intentions: according to our data, people are not motivated by a simple confirmation bias. They will not read just any article because they expect it to confirm their views; they will read articles by recommenders with similar opinions and high political knowledge, which are more likely to contain *useful* arguments supporting their views. They are motivated by the *expected utility for opinion confirmation*. Our results may thus represent a next step towards developing a theoretical understanding of how opinion leadership works in SNS.

The third path relates to traditional media source cues: articles by legacy and (to a lesser degree) digital-born news outlets are perceived to have more *societal relevance* than tabloid articles and are thus more likely to be read when recommended. Contrary to expectations, perceptions of credibility differ by outlet type but have no impact on reading intention. This finding contradicts of a number of previous studies on the importance of credibility for news selection (Choi et al., 2006), but might be explained by the particular usage situation on a social network. As news selection on Facebook is a social experience, respondents apparently place

more importance on whether an article is likely to contain *relevant* than *credible* information. This would indicate that when using Facebook, users are more concerned with *what people are talking about* than *whether is true* or not. This notion is corroborated by our finding that reading intentions, as well as perceptions of credibility and societal relevance, are higher for unknown digital-born outlets than for tabloids. Though legacy outlets are seen as more credible and societally relevant, Facebook users appear to give unknown sources considerable "benefit of the doubt" (at least compared to tabloids). This has important implications for the likelihood of mis- and disinformation by unknown sources being spread on Facebook. In addition, the non-significant interaction between tie strength and media cues indicates that recommender cues work the same for different types of media: recommendations also have a substantive impact on exposure to tabloids, even though they are seen as significantly less credible than legacy media. In fact, a recommended tabloid article is just as likely to be read ($M = 4.03$, $SE = .18$) as an article without a recommendation from legacy media ($M = 4.02$, $SE = .23$).

Apart from the effects on reading intention, our study allowed a more detailed look at how agenda setting effects may occur via agenda cueing on SNS. According to our study, SNS posts may not only affect perceptions of issue importance in general as found by Stoycheff et al. (2018), their impact differs depending on the recommender's socio-political characteristics and the scope of issue relevance: For evaluating societal issue importance, users followed the recommendations of highly knowledgeable, but not necessarily politically similar friends. In other words, they trusted perceived experts. However, indirect effects on reading intentions were limited to recommendations by highly knowledgeable, politically similar friends which increased the perceived issue relevance for oneself. Thus, future studies on agenda setting (or agenda

cueing) in SNS should include different social- and socio-political characteristics to further distinguish the conditions for changes in perceived issue importance of different scopes.

These interpretations have limitations. First, our manipulation of tie strength did not use the real profiles of participants' Facebook friends but worked via imagination. However, the significant manipulation check and the main effect of tie strength showed that this manipulation worked. Still, one could argue that the entire experimental situation was rather artificial as the post itself did not appear in participants' real Facebook stream but as a simple screenshot of a stream, and participants were asked to imagine it was their own news feed. Thus, our experimental setting reduces the ecological validity of our results compared to the study by Turcotte et al. (2015) in which participants were deceived into thinking the friend actually posted the news article on Facebook. Second, our dependent variable only measured the *intention* to read the article, rather than real usage. Third, the five topics we used for the news articles were non-polarized. More polarized topics may lead to stronger effects of opinion similarity regardless of the perceived knowledge of the recommender. Fourth, our mediation analyses should be interpreted carefully as the mediator outcomes are only partly explained by our experimental manipulations but also by personal predispositions. That is, the explained variance in news exposure by our mediation model originates only partly from our experimental factors. Lastly, we conducted our experiment in Europe, in a media system in which the audience is well aware of the differentiation between media types with respect to credibility and societal relevance. Thus, replications in different media systems are needed to confirm whether the media source still plays a role independent of personal recommendations.

Despite these limitations, this study showed that personal news recommendations motivate individuals to get involved with political news – if news are recommended by close

friends or by contacts with high levels of knowledge and similar opinions on the topic. INE via Facebook may thus help keep people connected to the political public sphere, particularly those who are not connected via traditional media. However, our results also suggest that though news contact on Facebook may be "incidental" in the sense of "unintentional," it does not occur "by chance,", i.e., not all Facebook users will benefit in an equal manner. First, the likelihood of unintentionally encountering news (particularly diverse news) will depend for each user on their choice of Facebook friends (who may vary in their news-sharing habits) as well as their past reactions to shared news articles: The less they click on recommended articles, the less they will see news recommendations from friends in the future due to the news feed algorithm. Second, people do not treat all "incidental" news recommendations the same. Their news exposure following incidental news contact depends on social and political preferences, they prefer to maintain existing strong relations with others and to engage with news they expect to confirm their existing beliefs (by preferring recommendations from like-minded, knowledgeable friends).

In sum, INE via Facebook has the potential to maintain a normatively desirable connection to the public sphere, but this is limited by the configuration of Facebook's algorithm and the motivations of its users. As our study shows, people tend to follow INE recommendations by more homophile strong ties and knowledgeable, politically similar contacts, i.e., INE on Facebook can easily be transformed into a form of self-reinforcing selective exposure. Thus, future research should continue to explore the potential of INE via Facebook and other social media platforms, but should pay close attention to its preconditions and circumstances because not all kinds of INE will contribute equally towards ensuring a well-informed public.

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Table 1. *ANCOVA test of between subjects effects for reading intention by media type, tie strength, opinion similarity, knowledge recommender, their interactions and covariates*

Factor	*df*	*F*	*p*	η_p^2
Adjusted model	29	4.45	< .001***	.27
CV Previous topic interest	1	30.26	< .001***	.08
CV Facebook use per week	1	4.05	.045*	.01
CV Following any news site (yes = 1)	1	9.12	.003**	.03
Media type	2	4.20	.016*	.02
Tie strength	1	7.08	.008**	.02
Opinion similarity (high = 1)	1	.41	.525	.00
Knowledge recommender (high = 1)	1	9.41	.002**	.03
Media type * tie strength	2	.14	.870	.00
Media type * opinion similarity	2	.34	.717	.00
Media type * knowledge recommender	2	.71	.490	.00
Opinion similarity * knowledge recommender	2	12.30	.001**	.03

Note. $R^2 = .27$, $R^2_{\text{adjusted}} = .21$, model is fully saturated but only significant ($p < .05$) factors or factors of interest for the hypotheses are displayed, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 382$

Table 2. *Indirect and total effects of media type, tie strength, opinion similarity, knowledge recommender and the interaction between opinion similarity and knowledge recommender on reading intention*

	Unstandardized coefficient [95 % CI]	*p*
Tie strength (0 = weak, 1 = strong)		
Indirect: tie strength via social monitoring (H2a)	.36 [.21, .51]	< .001***
Total: tie strength on reading intention (H1)	.44 [.16, .73]	.002**
Knowledge recommender		
Indirect: knowledge via social monitoring (non-hypothesized)	.08 [.03, .12]	< .001***
Indirect: knowledge via issue importance self (RQ2c)	.03 [.00, .07]	.056†
Total: knowledge on reading intention (H3)	.15 [.05, .24]	.003**
Opinion similarity (OS) * knowledge recommender (KR)		
Indirect: OS * KR via issue importance self (RQ2c)	.03 [.01, .06]	.041*
Total: OS * KR on reading intention (RQ1)	.07 [.01, .13]	.037*
Legacy media (0) vs. tabloid (1)		
Indirect: legacy vs. tabloid via societal relevance outlet (H7b)	-.48 [-.86, -.09]	.015*
Total: legacy vs. tabloid on reading intention (H6)	-.48 [-.81, -.15]	.005**
Legacy media (0) vs. digital-born (1)		
Indirect: legacy vs. digital born via societal relevance (H7b)	-.25 [-.51, .00]	.055†
Total: legacy vs. digital-born on reading intention (H6)	-.37 [-.67, -.07]	.015*

Note. Only significant ($p < .05$) ore marginally significant ($p < .06$) coefficients are displayed. Non-significant coefficents and included covariates are not shown for clarity reasons. † $p < .06$, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 332$

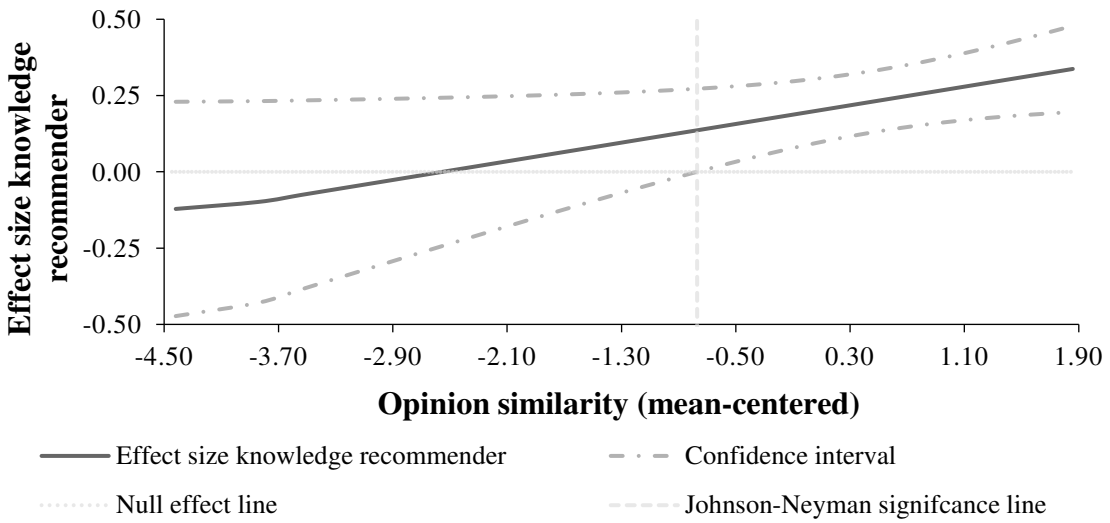


Figure 1. Effect of the knowledge of the recommender by opinion similarity controlled for tie strength. The variables knowledge of the recommender and opinion similarity were mean centered before calculating its interaction. $n = 289$

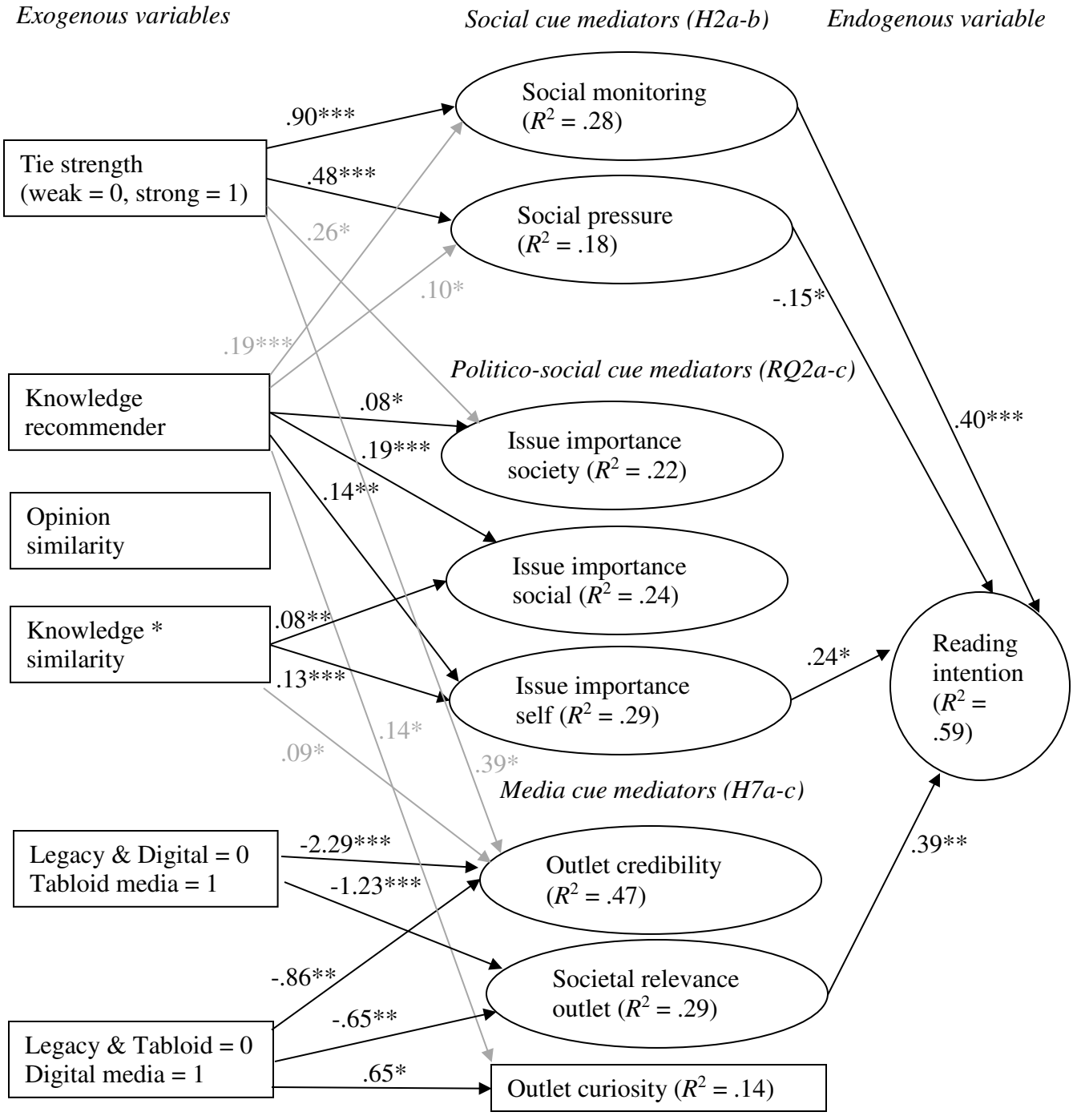


Figure 2. Estimated structural model. Displayed are only significant ($p < .05$) unstandardized coefficients. Black paths were hypothesized, grey paths are additional signficant coefficients. Measurement model, covariates and correlations between mediators are included but not shown for clarity reasons. *** $p < .001$, ** $p < .01$, * $p < .05$, $n = 332$, CFI = .977, RMSEA = .034, SRMR = .032.

Online Appendix A

Table Online Appendix A. *Descriptive statistics for reading intention by factors media type and tie strength controlled for covariates*

Media type	Tie strength	*M*	*SE*	95 % CI	*n*
Legacy	Weak	4.08	.20	[3.69, 4.47]	43
	Strong	4.41	.20	[4.02, 4.80]	50
	Without recommendation	4.02	.23	[3.56, 4.48]	30
	Overall	4.22	.13	[3.97, 4.47]	123
Digital-born	Weak	3.65	.23	[3.19, 4.10]	37
	Strong	4.19	.19	[3.82, 4.55]	55
	Without recommendation	3.93	.23	[3.49, 4.37]	32
	Overall	3.92	.13	[3.65, 4.18]	124
Tabloid	Weak	3.57	.22	[3.15, 3.99]	38
	Strong	4.03	.18	[3.68, 4.37]	57
	Without recommendation	3.42	.20	[3.02, 3.81]	40
	Overall	3.76	.13	[3.51, 4.00]	135
Overall	Weak	3.77	.13	[3.52, 4.01]	118
	Strong	4.21	.11	[3.99, 4.42]	162
	Without recommendation	3.79	.13	[3.54, 4.04]	102
	Overall	3.96	.07	[3.81, 4.11]	382

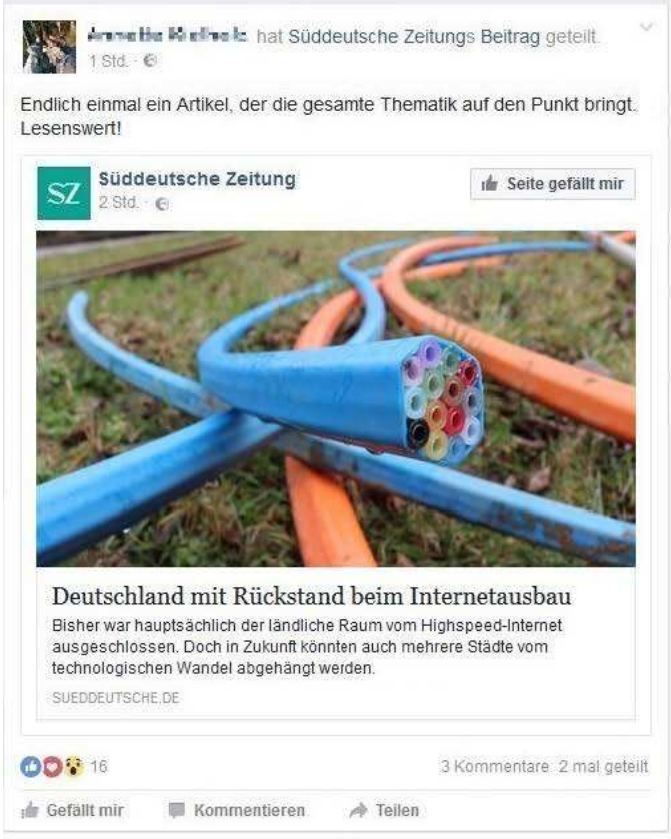
Note. Previous topic interest, amount of Facebook use, and general following of any news site were included as covariates to estimate the means, CI = confidence interval.

Online Appendix B

Original stimulus (example)

Zur Erinnerung, beide Posts stammen von:

Peter



English translation

As a reminder, both posts originate from:

Peter